

The opinion in support of the decision being entered today  
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ELISABETH LAKSO, EVA SIMMONS, HANNELE NURMI,  
ANNA KARIN JONBRINK, and ANDERS SILFVERSTRAND

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Appeal 2007-1322  
Application 09/720,908  
Technology Center 3700

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Decided: August 22, 2007

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Before WILLIAM F. PATE, III, MURRIEL E. CRAWFORD, and  
JENNIFER D. BAHR, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Elisabeth Lakso et al. (Appellants) appeal under 35 U.S.C. § 134 from  
the Examiner's decision rejecting claims 1-7, 16-22, 29, 30, and 34-38, the

only pending claims. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

Appellants' claimed invention is directed to a method of producing an absorbent article, absorbent article components, and packaging material or units comprised of material that contains polyethene (also known as polyethylene) produced from renewable raw material (Specification 1).

The Examiner relies upon the following as evidence of unpatentability:

Barrocas	US 4,232,179	Nov. 04, 1980
Sigl	US 4,582,550	Apr. 15, 1986
Widlund	US 5,024,672	Jun. 18, 1991
Klemp	US 5,176,669	Jan. 05, 1993
Toms	US 5,417,679	May 23, 1995
Gruber	WO 94/07941	Apr. 14, 1994

George S. Brady, *Materials Handbook* 651-52 (McGraw-Hill 1991).

Appellants' disclosure (Specification 3, 9, and 14-18).

Appellants seek review of the Examiner's rejection of claims 1-7, 16-22, 29, 30, and 34-38 under 35 U.S.C. § 103(a) as unpatentable over Appellants' disclosure, Barrocas, Toms, Gruber, Klemp, Widlund, Sigl, and Brady (the definition of "polyethylenes," first paragraph).

The Examiner provides reasoning in support of the rejections in the Answer (mailed August 2, 2006). Appellants present opposing arguments in the Appeal Brief (filed May 5, 2006) and Reply Brief (filed September 29, 2006). Appellants' counsel presented oral argument on August 8, 2007.

## THE ISSUE

Appellants do not argue any of the rejected claims separately from claim 1. Therefore, in accordance with 37 C.F.R. § 41.37(c)(1)(vii), we

have selected claim 1 as the representative claim to decide the appeal of this rejection, with claims 2-7, 16-22, 29, 30, and 34-38 standing or falling with claim 1.

The Examiner finds that the applied references establish that it was known in the art at the time of Appellants' invention to produce components, including film components, of absorbent articles from material produced from polyethene derived wholly or in part from petroleum products, that is, non-renewable materials, and that it was known to produce ethene from ethanol, a renewable material, to produce polyethene from such ethene (Answer 4). From this the Examiner finds that Appellants' claimed invention differs from the prior art only in the use of renewable raw materials rather than non-renewable raw materials in the manufacture of polyethene used for absorbent materials or packaging materials and concludes that the use of the known polyethene made from renewable materials in the application field of absorbent articles and packages instead of from polyethene made from non-renewable materials would have been obvious to one of ordinary skill in the art "in view of the recognition that such would also provide the same advantage or benefit of being more environmentally friendly in those application fields" (Answer 5).

Appellants argue that the art cited by the Examiner does not teach using renewable materials when producing polyethene and that, moreover, there is no motivation found in the cited art to use polyethene made from renewable materials in absorbent articles and packages (Appeal Br. 13). Further, with particular regard to claims 1-7 and 34-38, which require the polyethene in the article or material to be 100% polyethene, Appellants

argue that the cited art teaches away from using a non-biodegradable polyethylene in the field of absorbent articles and packages (Appeal Br. 14).

In light of the above, the issue before us is whether the references cited by the Examiner establish that it would have been obvious to use polyethylene derived from renewable raw material in an absorbent article.

### THE FACTS

The Examiner has cited a plethora of references establishing that it was well known in the art at the time of Appellants' invention to incorporate polyethylene, albeit not necessarily polyethylene produced from renewable raw materials, in biodegradable, non-biodegradable and partially biodegradable components of absorbent articles. For example, Toms teaches providing a biodegradable film backsheet of absorbent articles, such as diapers, incontinence pads, sanitary napkins, and panty-liners, the biodegradable film backsheet comprising a mixture of an interpenetrating network of deconstructurized starch with ethylene/acrylic acid copolymers and an aliphatic polyester, with optional ingredients including certain polyolefins, such as polyethylene (polyethene) (Toms, col. 3, ll. 25-37 and 41-52 and col. 7, ll. 23-27). Toms also evidences, however, that the use of non-biodegradable polyethylene topsheet and backsheet materials in absorbent structures was known in the art at the time of Appellants' invention (Toms, col. 1, ll. 23-27 and 48-53). Toms' biodegradable backsheet materials are directed toward meeting the perceived need for such disposable products from materials that degrade relatively quickly and, in particular, toward replacing polyethylene backsheets, typically the largest non-biodegradable component of such absorbent articles, with liquid impervious films comprised of biodegradable

materials (Toms, col. 1, ll. 31-53). Widlund teaches that liquid impermeable layers in disposable diapers usually consisting of a thin polyethylene layer were known in the art at the time of Appellants' invention (Widlund, col. 1, ll. 44-47). Widlund additionally discloses, as part of the inventive concept, plastic strips made of polyethylene for fastening the tape tabs (Widlund, col. 3, ll. 7-13). Widlund does not give any indication that the known polyethylene layers or the inventive strips are biodegradable. Klemp teaches, as a component of a diaper, a liquid impermeable barrier 17 in the form of a thin film of polyethylene, which polyethylene "can" be a biodegradable polyethylene film with starch, carbon or other non-synthetic additives intended to promote biodegradability (Klemp, col. 4, ll. 17-22). In particular, Klemp teaches a film formed from 5-20% starch blended with polyethylene (Klemp, col. 4, ll. 23-25).

Barrocas is directed to the production of ethene (Barrocas, col. 1, ll. 7-8) and evidences that it was foreseen prior to Appellants' invention that methods of producing ethene from a renewable supply, such as alcohol obtained by fermentation of carbohydrates, as raw material would become more important in the future as world petroleum reserves are being depleted (Barrocas, col. 1, ll. 26-34).

Appellants admit it was known to produce polyethene by polymerization of ethene "derived from natural gas to crude oil" (Specification 6:11-13).

Appellants admit that ethanol is a renewable raw material when it is produced from a reproducible plant (Specification 9:4-6). Appellants also admit that sugar is converted to ethanol and carbon dioxide by fermentation under the influence of yeast fungi and that potatoes, seed, forest raw

materials or other plants are used in the fermentation process (Specification 9:7-10). These admissions establish that methods were known at the time of Appellants' invention to produce ethanol from reproducible plants or, in other words, to produce renewable ethanol, a renewable raw material.

Appellants further admit that it was known at the time of Appellants' invention to produce ethene from ethanol by dehydrating ethanol (Specification 9:11-14 and 16-17). There is a dispute between Appellants (Reply Br. 2) and the Examiner (Answer 4) as to whether Appellants' Specification also admits that it was further known to produce polyethene from ethene made from renewable material. In particular, Appellants' Specification states that "[p]olyethene which can be produced from the renewable ethene in the aforescribed manner, is already known in the art"<sup>1</sup> (Specification 9:15-16). This statement appears to indicate that polyethene from renewable ethene is known in the art, especially when viewed in light of Appellants' further disclosure that "[t]he novelty in the present context resides in the use of renewable raw materials in the manufacture of polyethene for use in absorbent articles" (Specification 9:17-18). These two statements, even read in combination, do leave open the possibility, however, that it is polyethene generally which is admitted to be known and that Appellants are simply observing that known polyethene can be produced from the renewable ethene.

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<sup>1</sup> With regard to "the aforescribed manner," we note that this statement is preceded by both a discussion of the process of producing polyethene from ethene from petroleum products, which are not renewable, and a discussion of the process for producing ethene from renewable ethanol (Specification 8-9).

## DISCUSSION

Whether Appellants admit that polyethene produced from renewable ethene is known or not is not dispositive in this case, especially in light of the teaching by Barrocas of the foreseeability of the importance of using renewable raw material, such as alcohol obtained by fermentation of carbohydrates, to produce ethene as the world petroleum reserves are being depleted. Given that it was known in the art to produce renewable ethanol, to produce ethene from ethanol, and to produce polyethene from ethene, it would have been obvious to one of ordinary skill in the art to produce polyethene from renewable ethene, that is, from ethene produced from renewable ethanol, so as not to contribute to the further depletion of the world petroleum reserves. To further use such polyethene produced from renewable raw materials in applications, such as components of absorbent articles, in which polyethene is known to be used would also have been obvious to one of ordinary skill in the art in furtherance of the same objective, namely, not contributing to the depletion of the world petroleum reserves, as “[a] person of ordinary skill is also a person of ordinary creativity, not an automaton.” *KSR Int’l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1742, 82 USPQ2d 1385, 1397 (2007).

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious

unless its actual application is beyond his or her skill.

*KSR Int'l.*, 127 S.Ct. at 1740, 82 USPQ2d at 1396. We must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.*

In this case, a person of ordinary skill in the art, who is also one of ordinary creativity, would clearly have recognized the applicability of the petroleum resource conservation advantage afforded by the use of polyethene from renewable raw materials in the field of absorbent articles and would have been prompted by market forces alluded to by Barrocas to modify any of the known absorbent articles comprising components including polyethene by using such polyethene from renewable raw materials. As discussed above, such known absorbent articles include biodegradable, non-biodegradable and partially biodegradable components and components consisting only of polyethene as well as components comprising polyethene mixed with other ingredients, such as biodegradable copolymers. Accordingly, the production of absorbent articles comprising a component consisting of 100% polyethene from renewable raw material or a component comprising polyethene from renewable raw material in mixtures with other ingredients would have been obvious to a person of ordinary skill in the art as a predictable use of prior art elements according to their established functions.

Appellants' argument that the cited art teaches away from using non-biodegradable polyethene in the application field of absorbent articles (Appeal Br. 14) is not persuasive of error in the Examiner's rejection. First, as mentioned above, the art cited by the Examiner establishes that it was



known to produce absorbent articles having a component made from polyethene, such components including either biodegradable or non-biodegradable components and thus including components consisting only of polyethene as well as components comprising polyethene mixed with other ingredients, such as biodegradable copolymers. Further, the use of polyethene from renewable raw materials is in no way inconsistent with the further addition of ingredients to render the component biodegradable. The combination of the features of biodegradability and production from renewable raw materials would render the article environmentally friendly from two different perspectives. Moreover, with particular regard to claims 1-7 and 34-38, which require the polyethene in the article or material to be 100% polyethene, even in the cited art teaching the use of biodegradable components, the polyethene added thereto is 100% polyethene.

For the foregoing reasons, Appellants have not demonstrated that the Examiner erred in rejecting claims 1-7, 16-22, 29, 30, and 34-38. The rejection is sustained.

SUMMARY

The decision of the Examiner to reject claims 1-7, 16-22, 29, 30, and 34-38 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

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